Hazard Analysis Form

This form is to be completed by the service subcontractor or Fermilab service coordinator for acceptance prior to work starting. In addition, this form is to be maintained at the site where the work is being performed. This is a dynamic document that requires modifications as the scope of work is expanded or hazards are identified that were not dealt with before.

Job Title SM3 magnet Disassembly_____

Contract/Change Order Number _____

Job Location ME7_____

Subcontractor	**Fermilab**
Company ___Taft Rigging_____	Project Manager_____Leon Beverly_
Project Manager _____Mick Cronin_____	Phone ____x3681_____
Phone ____708-927-6622_____	TM/CC Mike Mascione__
Superintendent ____Mick Cronin _____	Phone __3676__ Page ____266-6540_
Phone _____ Page _____	ES&H Rep. _Martha Heflin_____
ESH Rep. __Mick Cronin _____	Phone __3511__ Page _____
Phone _____ Page _____	Other _____

Prepared by: Jim Kilmer_____**Title** **Engineer**_____ **Date: Oct. 21, 2004**_____

Approved:_____ **Title** _____ **Date:** _____

Concur: _____ **Title** _____**Date:** _____

——— **Accepted** _____ **Date** _____

——— **Accepted as noted** _____ **Date** _____

Hazard Analysis

Using the format below, identify hazards and safety precautions/procedures to mitigate hazards. Use as many sheets as necessary.

Description of Work: _This job is the disassembly of the SM3 analysis magnet from the Meson east area. The job involves supporting the magnet coils and then removing in turn each of the slabs of steel making up the magnet frame until the coil pieces can be removed. The steel pieces have no lifting lugs or tapped holes as the magnet stands have. A separate HA covers drilling those tapped holes. The steel slabs are welded together so they must be cut apart with an air arc. Special fixtures are required for handling the steel slabs because of the small hook height and for handling the unusually shaped coil parts. The job is covered by a detailed written procedure and drawings for every part of the disassembly. This HA will cover each individual step only once although these steps are repeated many times to take apart the entire magnet.

Step/Phase of Job	Safety Hazard	Precautions/Safety Procedures
1. Install coil support brackets	Strains or sprains	Do not over-extend yourself or over-reach. Do not try to lift more than you can comfortably in a tight space. Get help.
	Pinch point Injuries	Do not put hands or fingers between the magnet iron and other objects. Don't try to torque bolts so much that you loose footing.
	Falls from ladders	Make sure ladder has stable secure footing. Don't over-reach ladder. Don't use top step.
2. Hook up crane to a steel slab.	Falling from heights	Working at heights above six feet fall protection must be worn. Using a platform lift all operators must be trained.
	Being hit by Falling objects	All personnel on this job must have on hard hats, safety shoes, and leather gloves.

	Improper Rigging heavy objects	**All rigging equipment must be rated for the load (each piece has a load rating called out in procedure). All crane operators will be trained. Torque any fixture bolts or swivel hoist ring bolts to rated torque values.**
3. Air Arc welds to steel slab.	**Hearing damage from Noise**	**All personnel must wear ear protection.**
	Burns from Hot metal splattering	**All personnel wear long sleeved shirts. No unnecessary personnel near arc. Arc operator must wear welders gloves. Cover anything that can be damaged by the arc spray.**
	Eye injury from Arc flash	**Do not stare at the arc. Operator must wear welding hood.**
	Injury or Damage from Fire	**A Fire watch person and fire extinguishers must present during all arcing of welds. Get a Fermilab Burn Permit.**
4. Move steel slab away from magnet and lower to floor.	**Damage to Equipment from Mechanical interferences**	**Watch carefully as the slab is lifted for the clearance between the slab and fixture and the bottom of the crane. Use trained crane operators and work slowly and carefully.**

5. Attach fixture to coil piece	**Pinch point Injuries**	**Do not put hands or fingers between coil piece and any part of fixture. NEVER crawl into the magnet bore area while the steel on one side is removed.**
	Injuries from Moving heavy object	**When positioning the fixture do not strain or over reach to position it. Do not lean out from a ladder and watch footing. Do not use the top rung. If using the platform lift use trained operators.**
6. Lift coil piece out from magnet and lower to floor.	**Property damage from Unstable load and odd shaped load.**	**Watch for load shifting as load is lifted.**
7. Secure magnet coil for storage.	**Injury from Falling magnet coil**	**Crib in such a way that coil is fully supported and stable before leaving it.**

I understand the hazards and required precautionary actions. I will follow the requirements of this hazard analysis or notify my supervisor if I am unable to do so.

Name (please print)	Signature	Date